

Diabetic foot in PRM

Oral communications

CO84-001-e

Interest of the apparatus in the treatment of plantar neuropathic diabetic foot ulcers.

About 120 patients

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Keywords: Ulcer; Diabetic foot; Off loading

Introduction.– The aim of our study was the evaluation of the effectiveness of the discharge by a non-removable or removable equipment in the treatment of plantar neuropathic diabetic foot ulcers.

Patients and methods.– One hundred and twenty patients with plantar neuropathic diabetic foot ulcer uninfected and non-ischemic were divided into three groups. The first group (40) was discharged through a fenestrated and non-removable cast; the second group (40) was discharged through a removable half shoe, and the last one (40) without discharge

Results.– The healing rates at 12 weeks of treatment was significantly higher in discharge group compared to group without discharge. Rates in groups boot, shoe, without discharge are respectively (80–72.5–37.5%) within an average of (31 ± 12.8–38 ± 20.5–39 ± 46) days, secondary osteomyelitis was developed in respectively (0.5, 20%).

Discussion.– The non-removable cast is effective in healing diabetic foot ulcers in a shorter period and reduces the risk of secondary osteomyelitis

Further reading

Ha Van G, Heurtier A. Comment mettre en décharge une plaie chronique du pied diabétique? *Diab Metab.* 1999;25:264–9.

Armstrong GD, Off-Loading the Diabetic Foot Wound *Diabetes Care.* 2001 24:1019–22.

<http://dx.doi.org/10.1016/j.rehab.2014.03.1382>

CO84-002-e

Risk factors for foot ulcer recurrence in patients with diabetes mellitus

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Keywords: Diabetes mellitus; Diabetic foot; Ulcer recurrence; Plantar pressure; Risk factors; Adherence; Callus

Introduction.– Plantar foot ulcer recurrence is common in patients with diabetes and peripheral neuropathy, but its risk factors are not well understood.

Methods.– In total, 171 neuropathic diabetic patients with a healed plantar foot ulcer and prescribed custom-made footwear were followed at 3-monthly intervals for 18 months or until ulceration. Demographic and disease-related parameters, barefoot and in-shoe plantar peak pressures during walking, footwear adherence, and daily stride count were entered in logistic regression models of plantar foot ulcer recurrence.

Results.– Seventy one patients had a recurrent plantar foot ulcer. Significant independent predictors were minor lesions (OR 9.06, 95% CI [2.98–27.57]), day-to-day variation in stride count (OR 0.93, 95% CI [0.89–0.99]), and cumulative duration of past foot ulcers (OR 1.03, 95% CI [1.00–1.06]). Significant independent predictors for the 41 pressure-related recurrences were minor lesions (OR 10.95, 95% CI [5.01–23.96]), in-shoe peak pressure 80% (OR 0.43, 95% CI [0.20–0.94]), barefoot peak pressure (OR 1.11, 95% CI [1.00–1.22]) and day-to-day variation in stride count (OR 0.91, 95% CI [0.86–0.96]).

Discussion.– Having a minor lesion was clearly the strongest predictor of ulcer recurrence, while recommended use of adequately offloading footwear was a strong protector. These outcomes define clear (threshold) targets for diabetic foot screening and management.

<http://dx.doi.org/10.1016/j.rehab.2014.03.1383>

CO84-003-e

Therapeutic footwear of 54 patients with diabetic Charcot foot

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Keywords: Diabetes mellitus; Charcot foot; Diabetic foot ulcer; Therapeutic footwear

Objective.– We followed prospectively 54 patients with Charcot foot. It was found that 49/54 had an history of plantar that healed. After healing we studied the recurrence of ulcers after wearing of made-to-measure therapeutic footwear.

Methods.– Fifty-four patients with Charcot foot without ulcers has got a therapeutic footwear made in our team by the same shoe maker. We studied the recurrence of plantar ulcers.

Results.– Eighty-five percent of the 54 patients had a history of plantar ulcer on the Charcot foot deformation (average duration of ulcer = 241 ± 340 days). One hundred percent healed. Average data are: age 58 ± 9 years, Diabetes age: 18 ± 12 years, Type 2: 98%, BMI 28 ± 7, 23 right foot, 21 left foot 10 bilateral Charcot foot. Ninety-two percent had a midfoot deformation. 91% of the patients did not have a recurrence of ulcers after an average follow up of 882 ± 899 days.

Two percent had a major amputation, 3% amputation of a toe and 2 patients deceased.

<http://dx.doi.org/10.1016/j.rehab.2014.03.1384>

CO84-004-e

Data-driven directions for effective footwear provision in diabetic patients with a history of foot ulceration

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Keywords: Diabetes Mellitus; Diabetic foot; Ulcer prevention; Therapeutic footwear; Footwear modification; Offloading; Footwear design

Introduction.– Diabetic feet are offloaded with custom-made footwear to prevent foot ulcers. This study evaluates the offloading effectiveness of modifying custom-made footwear and aims to provide directions for effective footwear provision.

Methods.– Eighty-five neuropathic diabetic patients with a healed plantar foot ulcer were provided with new custom-made footwear. This footwear was evaluated with in-shoe pressure measurements at three-monthly intervals for 15 months or until ulceration, and modified when peak pressure was ≥ 200 kPa. The effect of modifications on in-shoe peak pressure at these high-pressure target locations and at 8 anatomical foot regions was assessed and summarized in an offloading-effect matrix.

Results.– All footwear modifications significantly reduced peak pressure at the target locations (range -6.7% to -24.0% , $P < 0.05$). Repositioning a metatarsal pad or bar (-15.9%), applying local cushioning (-15.0%), and replacing the insole top cover (-14.2%) were the most effective single modifications. Combining the latter with a trans-metatarsal bar (-24.0%) or with local cushioning (-22.0%) were the most effective combined modifications.

Discussion.– In high-risk diabetic patients, significant offloading can be achieved at high-risk foot regions by modifying custom-made footwear. These results provide directions for effective offloading to be used in custom-made footwear design and evaluation for diabetic patients.

<http://dx.doi.org/10.1016/j.rehab.2014.03.1385>

CO84-005-e

Treatment of diabetic foot ulcers by a non-amovable windowed fiberglass cast without opening until healing: A prospective study of 177 cases

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Objective.– Evaluation of the rate of healing of chronic and deep diabetic foot ulcers (DFU) by a windowed fiber glass cast (WFC) without opening the cast until healing.

Methods.– A prospective non-randomised study of 177 diabetic foot ulcers treated by a non-amovable windowed fiber glass cast. Patients were followed until complete healing.

Results.– Duration of the ulcers: 604 ± 808 days (64% more than 6 months). Average surface was 4.6 ± 6.5 mm² and depth: 10.4 ± 10.8 mm. The time of wearing of the WFC was 92.7 days ± 90.1 . The healing rate was 83.6%. The duration of treatment by WFC was 96 days. Twenty-nine patients did not heal (16.4%). The inclusion of 21 patients with moderate peripheral vascular disease (12%) and 24 patients after osteotomy (14%) did not modify significantly the healing rate: respectively of 81% ($P = 0.970$) and 70.8%, ($P = 0.128$). Complications: 26 changed WFC, 14 ulcers with moderate infection. The amputation rate of toes was 2% without major amputation and phlebothrombosis. Treatment of DFU (even chronic and deep) by a WFC without opening the cast gives an excellent healing rate.

Conclusion.– The importance of off-loading the treatment of DFU is well confirmed by this study.

<http://dx.doi.org/10.1016/j.rehab.2014.03.1386>

Posters

P489-e

Diabetic foot: Clinical profile and prevalence of amputations

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Keyword: Diabetic foot amputation

Method.– Study of clinical and developmental profile of 77 diabetic patients admitted for diabetic foot during the year 2012. Descriptive cross-sectional survey.

Result.– The distribution by sex: F: 32% H: 68%. Mean age 62.6 years (± 11.3). Duration of diabetes: mean 12.9 years (± 8.9). Diabetes Type 2: 97%. Mean BMI: $24 (\pm 4.1)$. Balance Diabetes: average HbA_{1c} $9.2 (\pm 2)$. Length of stay: average 37 days. Lesions were due to inappropriate footwear in 22% of cases and in 13% of fungal case. The types of lesions were dominated by gangrene (59%), followed by abscesses (18%) and ulceration (9%). There was a healing response to care in 38% of patients, 62% underwent amputation level amputations toes: 33%, legs 33%, metatarsal: 23%, thighs 11%.

Discussion.– The diabetic foot affects men. Most patients were unbalanced. Overweight had no impact on the appearance of lesions. The foot lesion revealed diabetes in 12% of cases. The diabetic foot requires a multidisciplinary approach and strengthening prevention through education of diabetic patients.

<http://dx.doi.org/10.1016/j.rehab.2014.03.1387>

